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Robert E. England

 December 2001 **Journal of Computing Sciences in Colleges**, Volume 17 Issue 2

Publisher: Consortium for Computing Sciences in Colleges

Full text available: pdf(39.30 KB)

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This paper discusses the design and development of two primary components of Moses2, a virtual computing environment for use in undergraduate operating systems courses. Moses2 is an entirely original work produced and refined by the author over the last twelve years in conjunction with teaching senior level operating systems courses. In the Moses2 environment, students run and test original kernel emulator programs while they develop these programs as course projects. The features of the system ...

2 [Teaching concepts of virtual memory with the Moses2 microcomputer operating system environment simulator](#)

Robert E. England

 June 2005 **Journal of Computing Sciences in Colleges**, Volume 20 Issue 6

Publisher: Consortium for Computing Sciences in Colleges

Full text available: pdf(135.60 KB)

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A clear understanding of the concepts of virtual memory is important to any student of computer science or professional computer scientist, especially those who work in system administration or program at the systems level. Virtual memory is now the standard paradigm for solving the classic trade-off between expensive but fast main memory and the cheaper yet much slower hard disk drive space. This paper discusses the design and implementation of the virtual memory simulation facility of Moses2, a ...

3 [Tools: NIST Net: a Linux-based network emulation tool](#)



Mark Carson, Darrin Santay

 July 2003 **ACM SIGCOMM Computer Communication Review**, Volume 33 Issue 3

Publisher: ACM Press

 Full text available: pdf(509.00 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Testing of network protocols and distributed applications has become increasingly complex, as the diversity of networks and underlying technologies increase, and the

adaptive behavior of applications becomes more sophisticated. In this paper, we present *NIST Net*, a tool to facilitate testing and experimentation with network code through emulation. NIST Net enables experimenters to model and effect arbitrary performance dynamics (packet delay, jitter, bandwidth limitations, congestion, pac ...

4 NetPrIDE an integrated environment for developing and visualizing computer network protocols 



Pilu Crescenzi, Giorgio Gambosi, Gaia Innocenti

June 2005 **ACM SIGCSE Bulletin , Proceedings of the 10th annual SIGCSE conference on Innovation and technology in computer science education ITiCSE '05,**
Volume 37 Issue 3

Publisher: ACM Press

Full text available:  pdf(239.04 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this paper we present NetPrIDE, an integrated development environment for designing, implementing and visualizing computer network protocols, which has primarily been used for teaching computer networks. NetPrIDE makes use of an abstract and formal notation to clearly and firmly specify a protocol: once the protocol has been specified and the network topology has been fixed, the implementation and the visualization of the protocol is performed in a completely automated way.

Keywords: Java, computer network, protocol, software visualization

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S Goel, D Duchamp - USENIX Annual Technical Conference, 1996 - [usenix.org](#)

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T Boyd, P Dasgupta - Distributed Computing Systems, 2002. Proceedings. 22nd ..., 2002 - [ieeexplore.ieee.org](#)

... contain the same data for each program execution ... where heap allocations of the native Windows routines ... its initialization, loads amongst other modules the hook ...

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J Lepreau, M Hibler, B Ford, J Law - Proceedings of the Third USENIX Mach Symposium, 1993 - [usenix.org](#)

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... those alignment fix-up within the kernel emulator. ... While emulating that on native OS (eg, 64 ... executable instructions, such as program modules, being executed by ...

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H Massalin, C Pu - Proceedings of the twelfth ACM symposium on Operating ..., 1989 -

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... **modules** ... an asynchronous software interrupt sent by a thread (or interrupt handler) to ... ing efficient **emulation** of unimplemented kernel ca.ll.5 or machine ...

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... ponents of the VM may be implemented in software using ... known techniques to **emulate** the corresponding components ... put than the same OS running on a **native** machine ...

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... Furthermore, the growing demand for UNIX-based software would force development of a UNIX **emulator** at still more development cost. ...

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... to configure and control the operation of the **kernel emulator** (see Figure 2 ... flows; as discussed further below (section 3.1), **kernel data structures** are handled ...

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... **kernel/emulator** approach. 3.2 Virtualizing the VAX ... In essence, they sensitive **data structures** trap when executed by unprivileged code. ...

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... offs between a VMM security kernel approach and a **kernel/emulator** approach ... all sensitive

instructions and all references to sensitive **data structures** trap when ...

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The virtual machine and user process model used inmoses2: a microcomputer operating system ...

RE England - The Journal of Computing in Small Colleges, 2001 - portal.acm.org

... In the Moses2 environment, students run and test original **kernel emulator** programs while ... operation monitoring, Moses2 maintains its own **data structure** per user ...

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B BOND, SATM KHALID - EP Patent 1,209,564, 2002 - freepatentsonline.com

... At 518, the exemplary **kernel emulator** establishes **data structures**, which are copies of the PEBs and TEBs, but they are in a non-native format. ...

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... **kernel emulator**. More specifically, 50 exemplary **data** aligner, described herein, provides a mecha-nism for aligning—as necessary—**data structures** shared by ...

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CE Kahn - IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, 1991 - doi.ieeecomputersociety.org

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... In the Moses2 environment, students run and test original **kernel emulator** programs as they ... Block for the process, or PCB, which is a **data structure** that the O ...

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A Benkiran, G Durand, R Kraemer, MA Tag - INFOCOM'89. Proceedings of the Eighth Annual Joint ..., 1989 - ieeexplore.ieee.org

... a higher level taxonomy of communication **structures** in the ... two layers, namely the Operating System **Kernel Emulator** (OSKE), and ... code), and a global **data segment** ...

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